

THE ECONOMIC IMPACTS OF CRITICAL HABITAT DESIGNATION FOR THE CACTUS FERRUGINOUS PYGMY-OWL

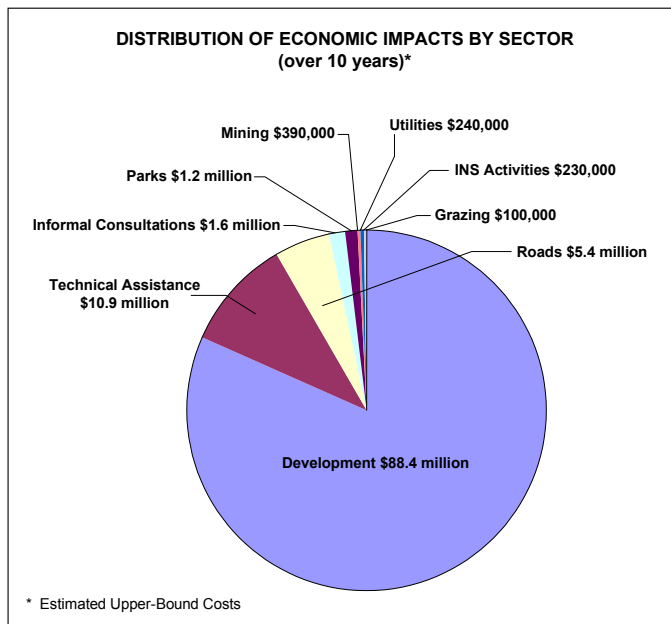
In November 2002, the U.S. Fish and Wildlife Service (Service) proposed designating critical habitat for the Cactus ferruginous pygmy-owl (*Glaucidium brasilianum cactorum*) on approximately 1,208,000 acres in Pima and Pinal Counties, Arizona. Critical habitat for the pygmy-owl had been designated previously but was vacated under court order in September of 2001. In the new proposal, approximately 57 percent of the designated acres are located on federally-owned or managed lands; 29 percent are owned by state or local authorities; 12 percent are located on private lands, and two percent of the total acreage are located on lands managed by other entities. The majority of lands included in the designation are currently undeveloped acres in Pima and Pinal Counties.



(*Glaucidium brasilianum cactorum*)

Federal agencies are required to consult with the Service under section 7 of the Endangered Species Act (Act) to ensure that any action they authorize, fund, or carry out will not likely jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of a listed species' habitat. Activities potentially affected by this proposed designation of critical habitat include development activities, road and utilities construction, mining, livestock grazing, and Immigration and Naturalization Service and National

Park Service activities. Out of this group, impacts associated with real estate development activities are estimated to comprise about 80 percent of the total economic impact. Impacts are defined in terms of both the anticipated number and effort level of future consultations as well as any associated project changes taking place under section 7 of the Act.



Total costs of formal consultations and associated project modifications involving the pygmy-owl are estimated at \$70 million to \$108 million over the next ten years, or \$7 million to \$11 million annually. Costs associated with development activities are estimated at \$56 to \$88 million. These costs include potential reduced revenues to landowners, developers, and builders in the

form of lost profits, project delays, and off-site mitigation costs. Given the availability of substitute housing sites in Pima and Pinal Counties, the designation is not expected to result in an overall net loss in future housing to the region, and thus further regional economic impacts are not anticipated.

SUMMARY OF CRITICAL HABITAT COSTS OVER TEN YEARS (MILLIONS)		
Cost Category	Total Costs	Costs Attributable to Critical Habitat
Total Costs (2002 dollars)	\$70 to \$108	\$33 to \$52
Present Value (7 percent discount rate)	\$49 to \$76	\$23 to \$36
Annualized	\$7 to \$11	\$3 to \$5

Total costs associated with the proposed designation are unlikely to pose serious economic burdens to the region. In Pima and Pinal Counties, annual income and spending exceeded \$22 billion annually in 2000. Thus, the estimated upper-bound section 7 costs associated with the listing and proposed critical habitat designation of \$11 million annually represents less than 0.1 percent of the total value of economic activity in this region. Lower end costs, which are believed to be solely attributable to critical habitat designation, represent roughly one half of the total cost estimate.

Potential conservation benefits arising from the designation of critical habitat for the pygmy-owl include decreased habitat loss and creation of substitute habitat for the pygmy-owl. Potential indirect benefits may include preservation of open space; increased opportunities for desert recreational activities; educational and informational benefits; and overall ecosystem health in Pima and Pinal Counties. Insufficient information exists to quantify the benefits of habitat protection for the pygmy-owl. However, several studies reported in the economics literature attempt to estimate the non-use value the public holds for preservation of various species of birds, and in particular, the designation of critical habitat to protect a bird species. Non-use values represent the public's willingness-to-pay to preserve a species or enhance a species' population above and beyond any direct use. While these studies do not predict the willingness to pay individuals would have for the protections afforded to the pygmy-owl through section 7 of the Act, they support the notion that preservation of the pygmy-owl may generate substantial benefits to the public.

The table on the following page presents the key assumptions of the economic analysis, as well as the potential direction of the bias introduced by each assumption.

CAVEATS TO THE ECONOMIC ANALYSIS AND POTENTIAL DIRECTION OF BIAS	
Key Assumption	Effect on Cost Estimate
Consultation rates will not decrease over time.	+
The presence of other species (i.e., Pima pineapple cactus, lesser long nosed bat) has no influence on consultation/project modification costs.	+
All delays and mitigation efforts associated with modifications to development plans during the consultation process are attributable to section 7 implementation for the pygmy-owl, and not to other pre-existing constraints on development (particularly stringent mitigation targets for permitted development in many areas of Pima County).	+
All future developments will be part of large-scale developments that will be subject to consultation.	+
Developers will not foresee delays as part of their planning efforts.	+
There are no benefits to housing prices of preserving open space on-site or having a larger lot with natural lands.	+
Developers will realize an average profit of 5-10%.	?
Historic administrative consultation costs and specific project modifications are good predictors of future consultation outcomes.	?
Historic consultations involving residential developments are good indicators of future development, as far as number of units per development, median home price, etc.	?
Density of future development will remain the same after project modifications are imposed due to critical habitat.	?
Substitute development lots exist to offset loss units of development within critical habitat areas.	-
- : This assumption may result in an underestimate of real costs. + : This assumption may result in an overestimate of real costs. ? : This assumption has an unknown effect on estimates.	

Additional Information Request

The Service solicits specific public comment on the following issues related to the economic analysis:

1. The methodology and data used to identify economic activities that will likely be impacted by the designation;
2. The methodology and data used to forecast economic impacts in the region;
3. The methodology and data used to identify and estimate the economic impact of the designation on small entities;
4. The methodology and data used to consider the potential economic benefits of the designation.

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